

Remarks

The prosecution of this application has been rather lengthy and as such, the applicants are very desirous to close prosecution on this case and gain allowance. However, the art that continues to be cited against the claims of this case, even after many amendments and concessions have been made, are totally inadequate under an obviousness based rejection, and much much more when levied as sufficient to provide rejections based on novelty. The applicants have incurred the added expense of interviewing this case to further it towards allowance but, now find they are facing a final office action citing art that is no more relevant than previously cited art.

In preparation for filing an appeal for this case, the applicant is submitting the following arguments in support of allowance of the claims as previously presented to the Office. The applicant respectfully submits that it is beyond clear that the references cited in the Office Action are insufficient to give rise to a 35 USC 102 rejection and as such, these arguments should be persuasive. Also, since no amendments are being presented in this response, there is no need for an additional search and as such, prior to filing an appeal for this case, the applicant respectfully submits that the finality of the office action can be withdrawn and the claims allowed.

Claim Rejections – 35 USC § 112

The Office has presented objected to claims 41-46 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particular point out and distinctly claim the subject matter which applicant regards as the invention. The applicant has amended claims 41, 42 and 49 to overcome this objection by clearly defining the terms.

Claim Rejections – 35 USC § 102

The Office has presented rejections for claims 41, 52-54, 64 and 66 35 USC 102(e) as being anticipated by United States Patent Number 6,799,046 issued in the name of Tang.

With regards to claim 41, the Office alleges that Tang describes each and element recited in the claim. The applicant respectfully disagrees.

Tang teaches locating a cellular telephone by performing a comparison between the RSSI vector (which is one event on the cellular network and which is collected over a grid of locations) and the MAHO list (which is one event on the cellular network).

This method deals with comparison of static information generated and measured on a specific location. *Tang* says that the criterion for determining the mobile location is by performing a statistical comparison between the RSSI vector and the MAHO list and minimizing the error function (col. 5, lines 36-52). Thus, it is clear that *Tang* does not deal at all with the case in which there are several MAHO lists that generate the same or similar (very close) error values when compared to several RSSI vectors for different location.

The current invention, in contrast to *Tang*, teaches only identifying the location of a moving mobile, by comparing sequences of cellular network events collected during a drive, during which the mobile unit is dynamic rather than static. These sequences are then processed to overcome the problem of similar sequences for neighboring roads.

The phenomenon of similar RSSI values for different grid locations which may be located on different roads happens very frequently in cellular networks. Furthermore, moving between 2 locations over a road generates movement dependent network events (such as handovers). Performing analysis of a sequence of events for a mobile unit during a drive on the road, is the key element in the capability that is recited in the claims and attains the ability to differentiate between neighboring roads.

Tang does not describe the comparison of sequences of events generated during a drive and does not teach the analysis to differentiate between similar measurements for neighboring roads. Therefore claim 41, that teaches the analysis of sequences of network events generated during a drive, and performing analysis to overcome the problem of similar sequences for neighboring roads, cannot be anticipated by *Tang* and thus, claim 41 is allowable.

With regards to claim 53, the Office alleges that *Tang* describes each and element recited in the claim as presented with respect to claim 41 and, the Office further alleges the claim 53 of the analysis being on extraction of handover related messages is also described in *Tang*. The applicant respectfully disagrees.

Handover related messages do not include any signal strength measurements whereas *Tang* relies on signal strength measurements included in both the RSSI vector and MAHO list. Thus, the applicant respectfully submits that claim 53 is allowable over the cited reference.

With regards to claim 52, the Office alleges that *Tang* describes the element of conducting analysis is based only on cell ID data. The applicant points out that *Tang* describes a reliance on the signal strength measurements (RSSI, MAHO list) in its operation. Therefore, *Tang* does not teach an analysis based only on cell ID data. Consequently claim 52 cannot be anticipated over *Tang* and should be allowed.

With regards to claim 54, the Office further alleges that *Tang* describes the recited element of conducting analysis that is based on extracting new events from a different percentage of calls in different parts of the cellular system. This element means that in an area with many vehicles driving per minute the system can use only 10% or 5% of the calls and thus lower the requirement for computing power to perform the analysis. *Tang* does not teach this element at all. Thus, claim 54 is allowable over the *Tang* reference

With regards to claim 66, the Office further alleges that *Tang* describes the element of conducting analysis by continuously updating the learnt database by physically estimating the location of handovers within the matched sequences that do not appear in the database. *Tang* does not deal with handovers at all so *Tang* cannot and does not teach estimating the location of handovers. Thus, claim 66 is not anticipated by *Tang* and should be allowed.

With regards to claims 42-52, 54, 56-62 and 64-67, these claims are all dependent claims that depend either directly or indirectly from claim 41 and as such are also in condition for allowance.

Claim Rejections – 35 USC § 103

The Office has presented rejections of claims 60-62 under 35 U.S.C. 103 as being unpatentable over United States patent number 6,799,046 in the name of Tang, in view of United States Publication 20060072501 filed in the name of Toshimitsu. The applicant respectfully disagrees.

With regards to claim 60, Toshimitsu describes a technique to simplify the handover process and improve communication efficiency of cellular networks (page 1 [0010]). To accomplish this, Toshimitsu describes obtaining the vehicle position and speed by using extrinsic measurement devices such as a gyro, GPS, magnetic sensor, CCD camera or the like (page 10 [0122]). Toshimitsu does not teach obtaining or using any network information by monitoring the cellular network in order to recognize its moving speed or position and/or conducting analysis of network events. On the other hand, claim 60 clearly recites conducting analysis of a new sequence of cellular network events related to a particular mobile unit, the new sequence of cellular network activity events being gathered during a new drive and is independent of physical, geographically-defined location information, in conjunction with the learnt database to correlate the new sequence of cellular network events to a physical geographic location.

Toshimitsu teaches that when a vehicle slows down, the time difference between handovers will be longer, however Toshimitsu does not teach obtaining network information and using it to measure the speed on road sections. In addition Toshimitsu does not teach any method to process a sequence of cellular network events to overcome the problem of similar sequences for neighboring routes.

In addition, Toshimitsu does not teach collecting handover data and specifically does not teach collecting handover time density is recited in claim 60. Due to these arguments, the applicant submits that claim 60 cannot be viewed as being unpatentable over Tang in view of Toshimitsu and should be allowed.

With regards to claim 61, the Office further alleges that Toshimitsu further describes collecting handover data and specifically collecting handover time density as is recited in claim 61. The applicant respectfully disagrees and as a matter of record, submits that this element is not disclosed in Toshimitsu.

With regards to claim 62, the Office further alleges that Toshimitsu further describes a calibration stage in which traffic speed of a route section is correlated with the rate of handovers for this route section at the same time as recited in claim 62. The applicant respectfully disagrees and as a matter of record, submits that this element is not disclosed in Toshimitsu.

Allowable Subject Matter

The Office has indicated that claims 47, 48, 50, 51 and 65 are objected to for being based on a rejected claim but that if rewritten in independent form would be allowable. However, as presented above, the applicant submits that these claims actually depend from allowable base claims and as such are also in condition for allowance as is.

The Office has indicated that claim 63 is allowed.

Conclusion

Thus, the applicant has shown that each of the currently pending claims is allowable over the cited references and such action is respectfully request of the Office.

If the Office has any questions or if there are any actions that can be handled through an Examiner's Amendment, the applicant requests the Office to contact the attorney of record using the below-provided contact information.

Respectfully submitted,

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By:_____

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